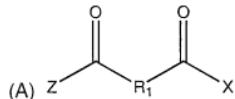


**Amendments to the Claims**

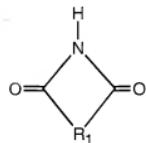
1. (Currently amended) A method of processing an initial compound having a formula (A)



wherein  $R_1$  comprises a saturated or unsaturated, branched or un-branched group containing ~~from 1 to 10~~ two or three carbon atoms, and wherein Z and X independently comprise one or more of C, H, O, N, S, a halide, and a counter-ion, the method comprising:

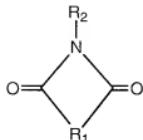
providing the initial compound;

converting at least a portion of the initial compound to a second compound having a formula



the converting comprising one or both of thermal and catalytic processing;

reacting the second compound with an alkylating agent to form a derivative having a formula



wherein R<sub>2</sub> comprises an alkyl group, the derivative being present in a mixture comprising one or more additional components selected from the group consisting of the initial compound of formula A, the second compound, solvent, the alkylating agent, byproducts, and fermentation broth components; and

performing a purification to remove at least some of the one or more additional components.

2. (Original) The method of claim 1 wherein X and Z are independently selected from the group consisting of OR<sub>3</sub>, OH, and O<sup>-</sup> with a counter-ion, wherein R<sub>3</sub> comprises an alkyl group.

3. (Original) The method of claim 1 wherein the initial compound is selected from malic acid, maleic acid, fumaric acid, itaconic acid, succinamic acid, succinic acid or a derivative thereof.

4. (Original) The method of claim 1 wherein the alkylating agent comprises a member of the group consisting of an alcohol, a polyol, an acetal, a carboxylate, an alkyl halide, an alkyl amine, a carbonate compound, a thiol compound, a thiocarbonate compound, and a sulfate compound.

5. (Original) The method of claim 1 further comprising, prior to the converting, providing the initial compound in an aqueous solution.

6. (Original) The method of claim 1 wherein the initial compound is a diammonium salt.

7. (Original) The method of claim 1 wherein ammonia is added during the converting.

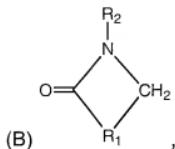
8. (Original) The method of claim 1 wherein ammonia is recovered during the converting, after the converting or both during and after the converting.

9. (Original) The method of claim 1 wherein the purification comprises at least one of decanting, distillation, sublimation, steam distillation, extraction and crystallization.

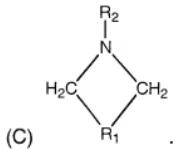
10. (Original) The method of claim 1 wherein the additional components comprise a reaction byproduct and wherein an additional amount of the derivative is produced from at least some of the reaction byproduct during the purification.

11. (Original) The method of claim 1 wherein the initial compound is selected from an ammonium succinate and diammonium succinate.

12. (Original) The method of claim 1 further comprising, after the purification, hydrogenating the derivative in the presence of a catalyst to produce at least one member of the group consisting of a product having formula (B)



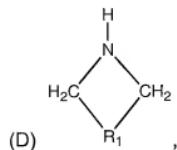
and a product having formula (C)



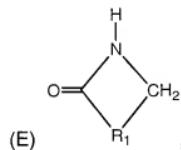
13. (Original) The method of claim 12 wherein the hydrogenating is performed in the presence of added hydrogen.

14. (Original) The method of claim 12 wherein the hydrogenating produces the compound having the formula (B) and the compound having the formula (C), the method further comprising separation of the compound having formula (B) from the compound having formula (C).

15. (Original) The method of claim 12 wherein the method additionally produces one or both of a compound having formula (D)



and a compound having formula (E)



and further comprising separating the compound of formula (B) from the compounds having formulas (C), (D) and (E).

Claims 16-44 (Cancelled).

45. (Previously presented) The method of claim 1 wherein the initial compound is a fermentation product and the providing comprises providing a fermentation broth.

46. (Previously presented) The method of claim 45 wherein prior to the converting, the water content of the fermentation broth is adjusted to be approximately equivalent to the amount, by weight, of the initial compound present in the mixture.

47. (Previously presented) The method of claim 45 wherein ammonia is present in the fermentation broth and wherein the ammonia concentration is adjusted to provide a ratio of ammonia relative to the initial compound of less than 2:1.

48. (Previously presented) The method of claim 1 further comprising after the purification, hydrogenating the derivative in the presence of a catalyst comprising at least one member of the group consisting of Fe, Ni, Pd, Sn, Pt, Co, Re, Rh, Ir, Os, Ag, Au, Ru, Zr, and Cu.

49. (Previously presented) The method of claim 48 wherein the catalyst comprises a support and from about 0.5% to about 5% Rh, by weight.

50. (Previously presented) The method of claim 49 wherein the Rh is edge-coated on the support.

51. (Currently amended) The method of claim 48 wherein the derivative is provided to a hydrogenation reactor in molten ~~or~~ solid form and is hydrogenated in an absence of added solvent.